PHENIX

TECHNICAL SUPPORT 2012

PHENIX WEEKLY PLANNING

5/31/2012

Don Lynch

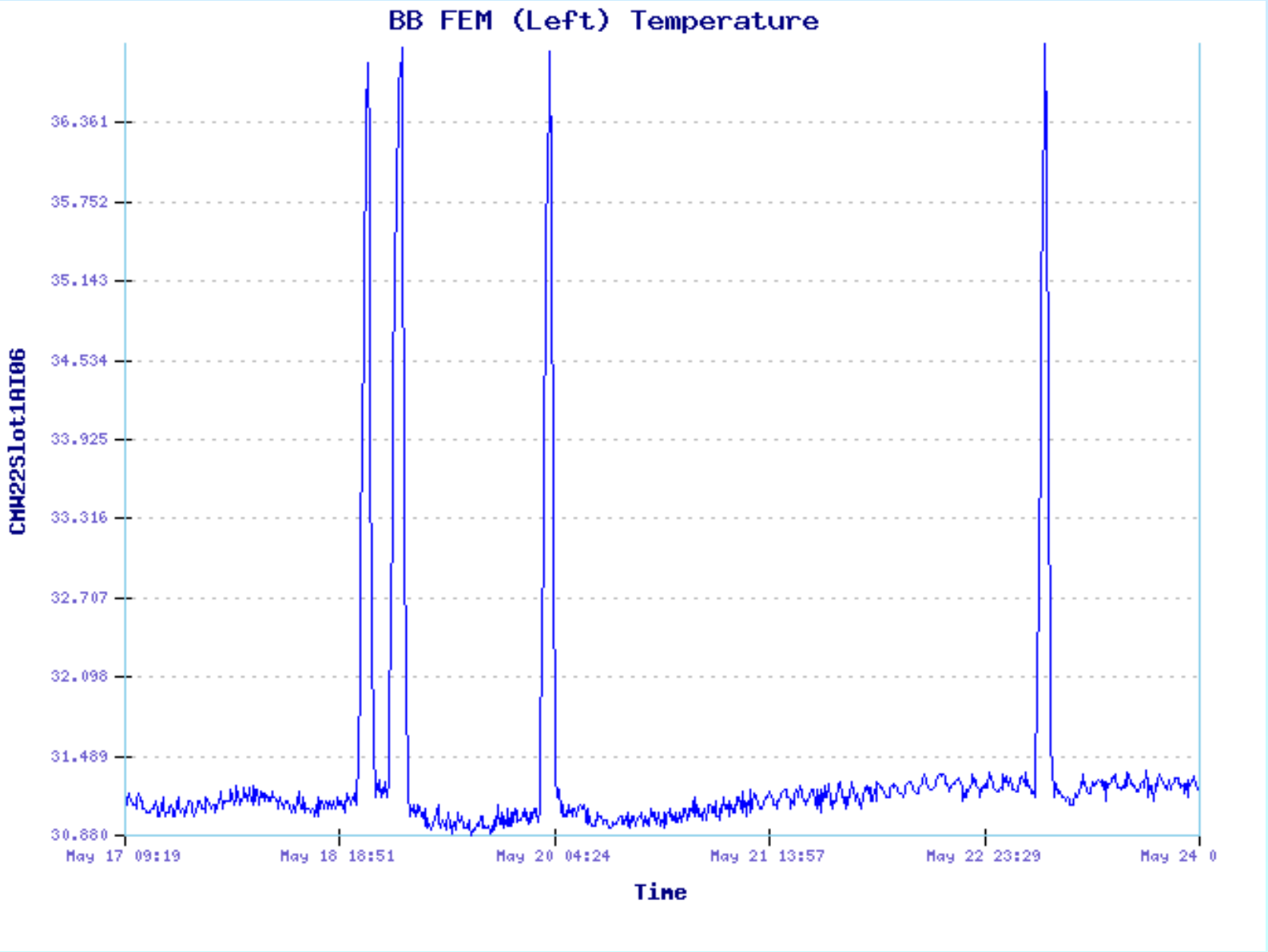
PHENIX

TECHNICAL SUPPORT 2012

This Week

- Memorial Day (Holiday)
- Cu-Au Run continues
- No Scheduled Maintenance access this week
- sPHENIX design and analysis continues
- 2012 Shutdown prep continues
- Other Business

TECHNICAL SUPPORT 2012



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Next Week

- Memorial Day, Monday 5/28: Lab Holiday
- Cu-Au Run continues
- Next scheduled maintenance access day Wednesday 6/6
- sPHENIX design and analysis continues
- 2012 Shutdown prep continues
- Other Business

2012 Shutdown Schedule

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Prep for shutdown	2/1-6/25/2011
Define tasks and goals	
Analysis and design of fixtures, tools and procedures	
Fabricate/procure tools and fixtures	
Tests, mockups, prototypes	
Receive, fabricate, modify, finish installables	
Review and approval of parts, tools, fixtures and procedures	
Assembly and QA tests	
AH Crane Upgrade (variable speed & wireless remote)	
End of Run Party	6/22/2012
Run 12 Ends	6/25/2012
Shutdown Standard Tasks	6/25-7/20/2012
• Open wall, disassemble wall, Remove MuID Collars,	
• Move EC to AH, etc.	
VTX Strip-pixel post run tests	6/25-6/30/2012
FVTX post run tests	7/1-7/8/2012
Disassemble VTX/FVTX services	7/9-7/27/2012
July 4th Holiday	7/4/2012
Open Station 1 North, remove MPC North for repairs	7/9-13/2012
Remove VTX/FVTX and transport to Chemistry Lab	7/30/2012
Remove MMS & MMN vertical East lampshades	7/23-7/27/2012
Summer Sunday (8/5) Prep and teardown	8/1-8/7/2012
Summer Sunday (RHIC)	8/5/12

2012 Shutdown Schedule (Continued)

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MuTr South Station 1 work	
Install access (Sta. 1work platforms)	7/30-8/3/2012
Disconnect Cables, hoses etc, ID/label all	8/6-8/10/2012
Remove FEE plates and chambers	8/13-8/17/2012
Station 2 Terminators and manifold upgrade through access opened by station 1 removal	8/20/-8/31/2012
MPC South repairs	8/20-9/15/2012
Labor Day Holiday	9/3/2012
MuTr South Station 1 work (Cont'd)	
Clean/install new MuTr Sta. 1 chamber parts and upgrades (concurrent At RPC Factory)	8/20/-9/7/2012
Re-install chambers and FEE plates	9/10-9/14/2012
Re-cable, re-hose and test	9/10-9/28/2012
Repair upgrade, test, reinstall VTX/FVTX	7/23-10/26/2012
Station 3 North and South (upper half) re-capacitation and air manifold upgrades	7/23-9/30/2012
Substation breaker upgrade/test (CAD)	8/20-9/30
AH utility power distribution upgrade	8/20-9/30
DC West maintenance (replace window)	9/15-10/15
RPC stations 1 and 3, north and south maintenance	As required
Other detector maintenance as required	As required
Infrastructure maintenance as required	As required
TBD prototype tasks	As required
Open Station 1 North, re-install MPC North	10/16-10/26/2012
Veterans Day Holiday	11/12/201212

2012 Shutdown Schedule (Continued)

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pre-run commissioning and prep for run 13 Prep for EC roll in 11/16/2012	11/1-12/31/2012 11/12-
Roll in EC	11/19-11/23/2012
Thanksgiving Holidays	11/22-23/2012
Prep IR for run	11/26-12/3/2010
Pink/Blue/White sheets	12/3-12/21/201
Christmas Holidays	12/24-25/2012
Start run 13	1/1/2013

New Electrical Work for 2012 Shutdown, not yet scheduled

1. **Support CAD replacement of Assembly Hall 480V Fused Switch Panels #8H-1, 8H-2, and 8 EMH1. Coordinate temporary power patch while work is being performed and minimize impact on shutdown work.**
2. **Add the Assembly Hall Crane lockout/contactor/ indicator light key switch circuit – similar to IR Crane.**
3. **Add Transient Surge Suppressor to 3 phase power panel on the Central Magnet Bridge.**
4. **The Gas Mixing House Breaker Panel for the Gas Mixing side is almost out of spare breaker slots and needs to be reviewed for increased capacity panel to replace it.**
5. **New computer rack replacements/additions for upcoming Run 13 & Rack Room computer infrastructure changes involving power distribution circuit (UPS and normal AC power) re-work.**

2012 Shutdown Schedule (Continued)

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Additional Work for 2012, not yet scheduled

1. Replaced aging magnet hoses (CM only)
2. identify obsolete services passing through sill and remove them.
3. Revisit cover for services coming from IR through sill.
4. Plan for stripping out TEC electronics and services to free up TEC racks.
5. Add limit switch and improved spooling control for window washer cable.

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DC West Repairs

(DC East is shown)

VTX/FVTX Cooling System 2012 Shutdown Work

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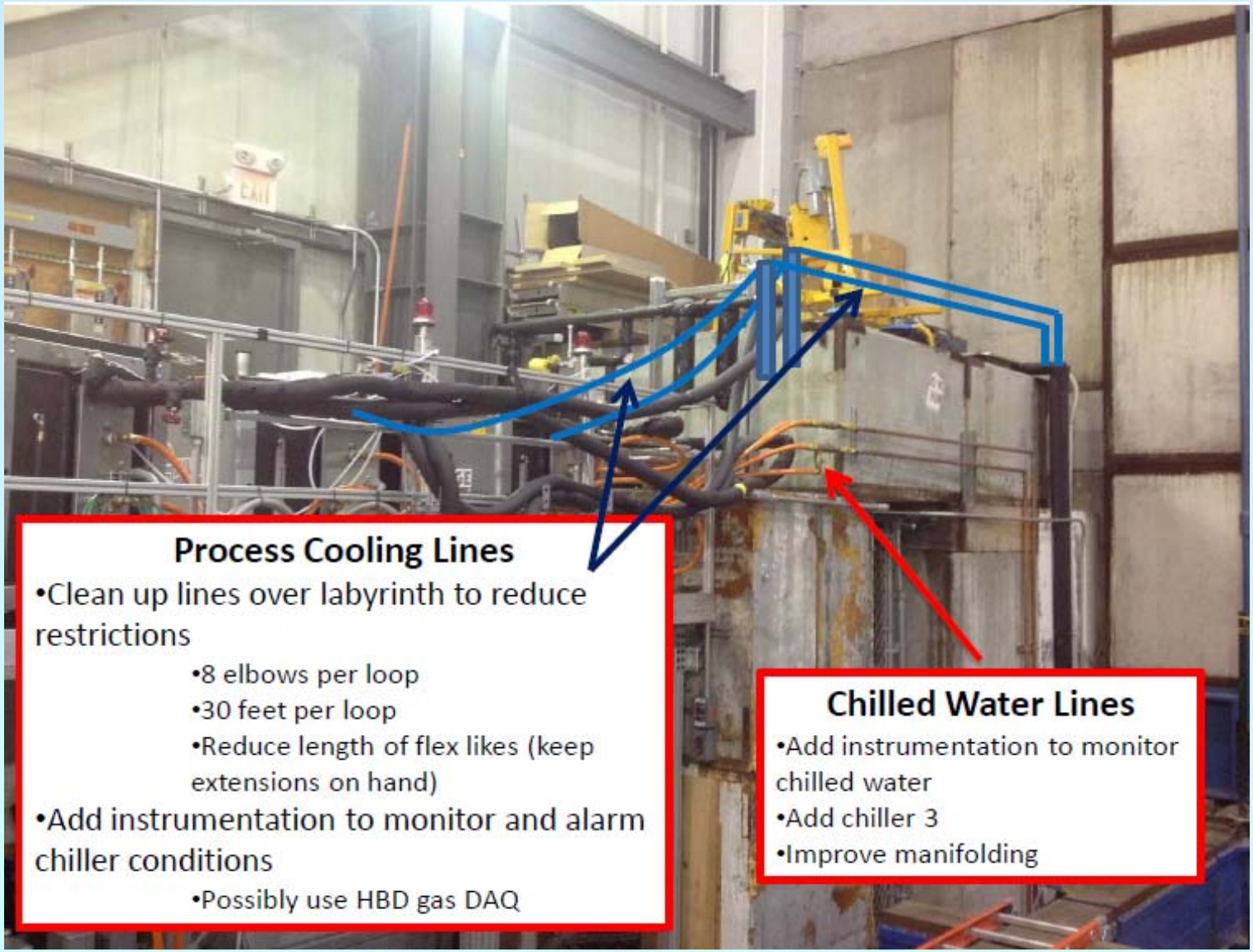
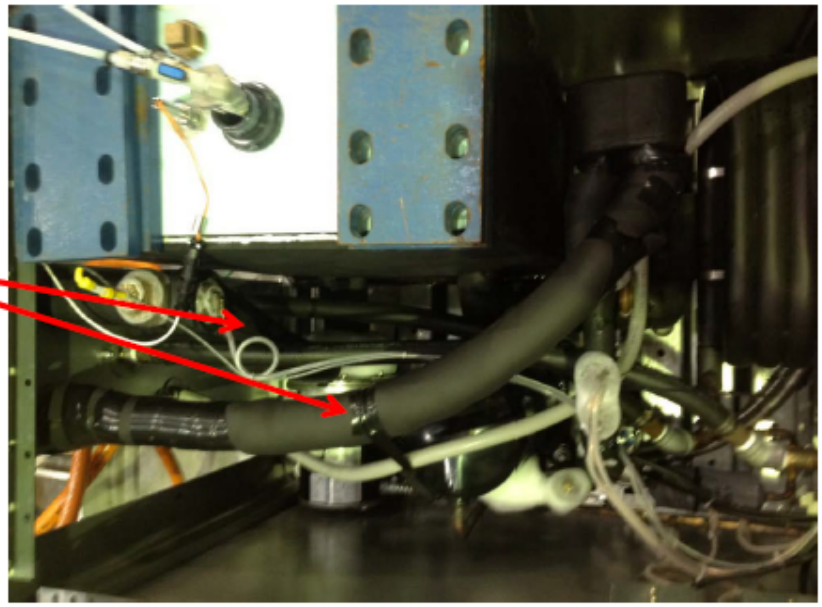


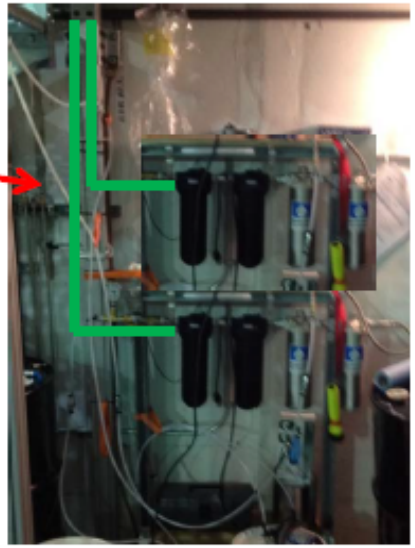
Chiller Work

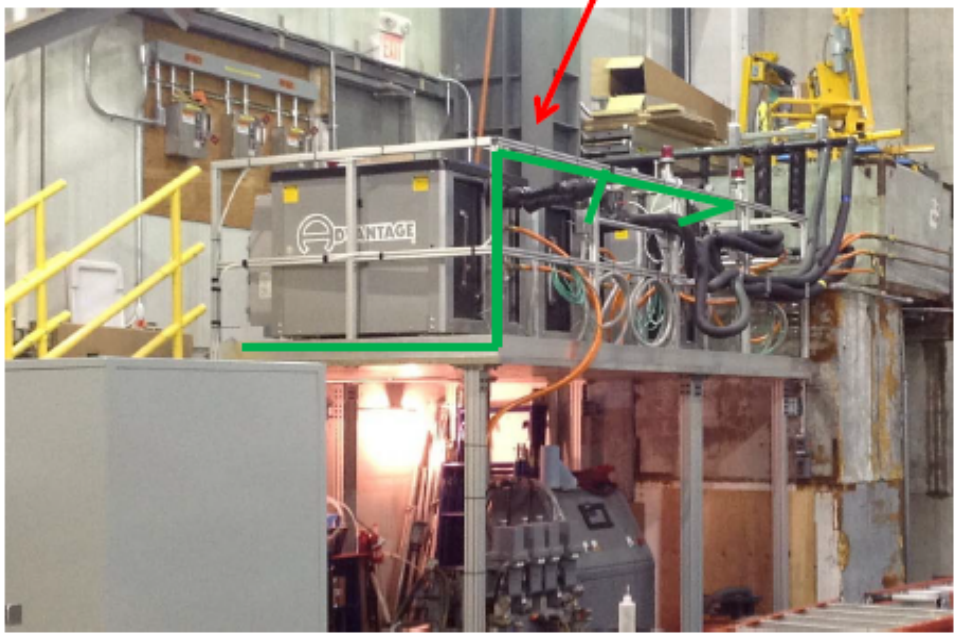
- Replace nylon reinforced hose with stainless flex (2 per Chiller)
- Bring in vendor to do maintenance on units

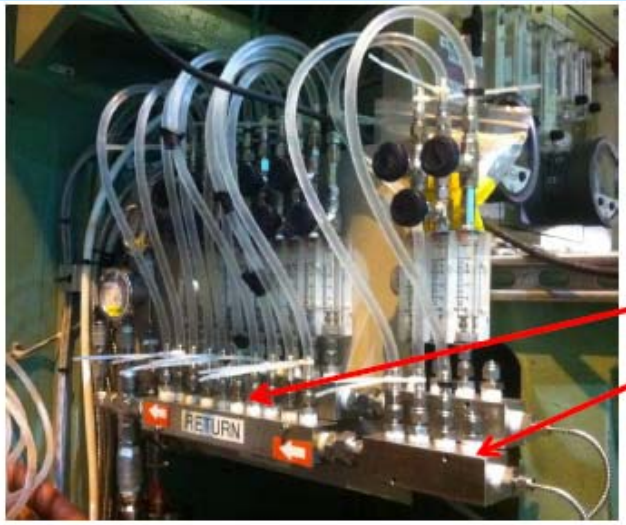


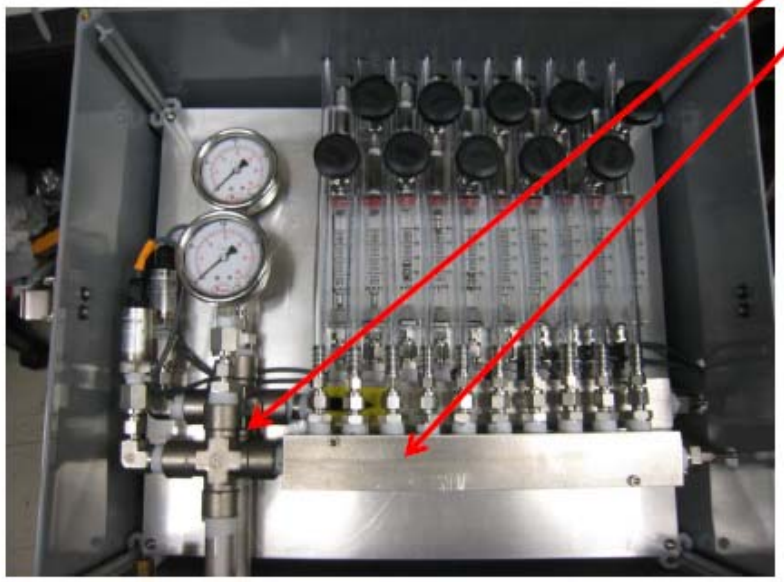
Upgrade Novec Cleaning

- Install filters for both loops
- Run insulated stainless lines from chillers to filters



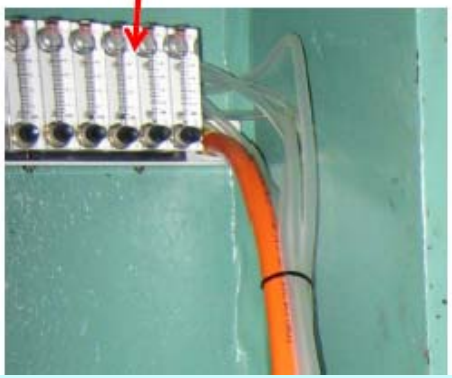






Manifolds in the IR

- Big Wheel
  - Rebuild to increase size of manifold
  - make pixel lines permanent
- Low Temp
  - Split North FVTX feeds
  - Upgrade to ¾" pipe from ½"
  - Increase size of manifold to reduce restrictions
- Nitrogen
  - Add more lines for FVTX feeds



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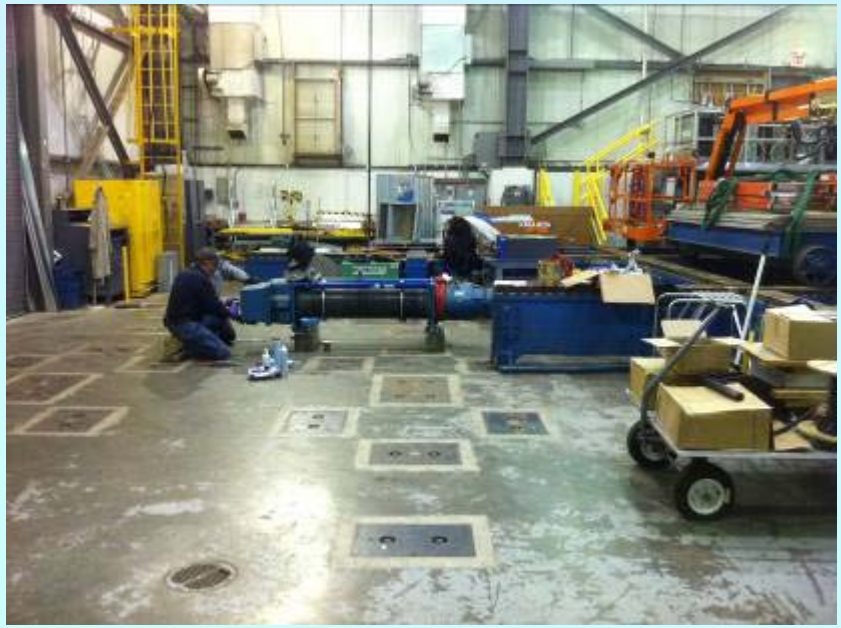
AH Crane variable speed drive
and wireless remote upgrade ??



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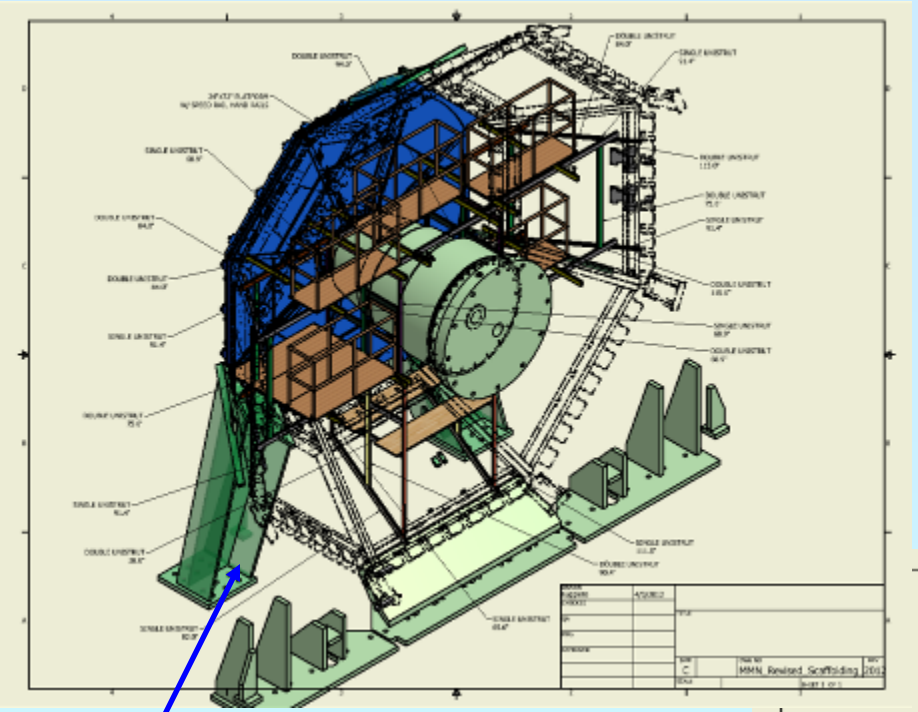
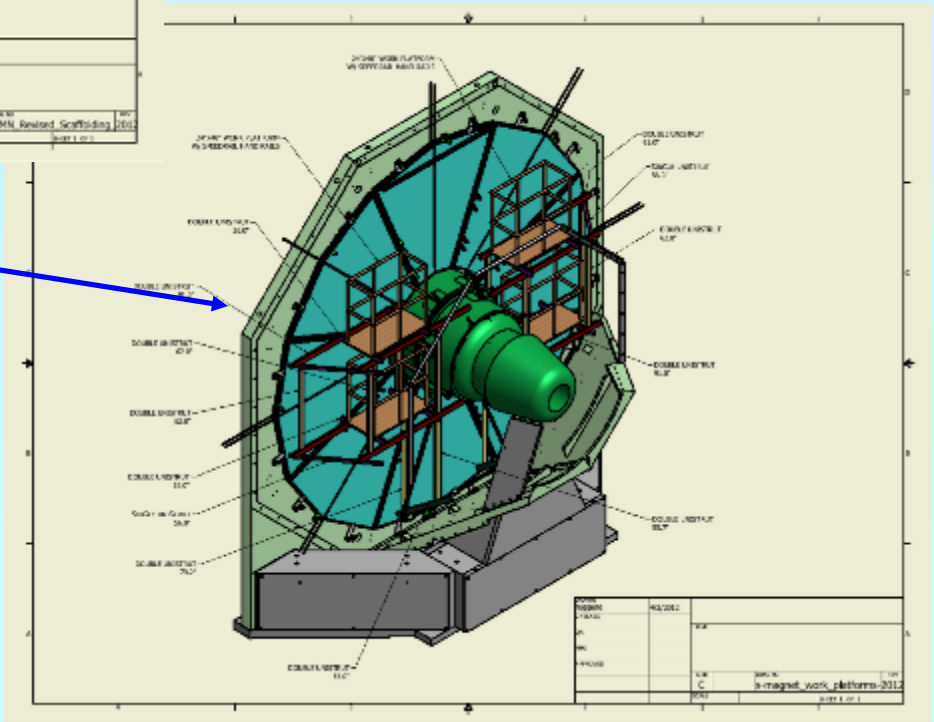
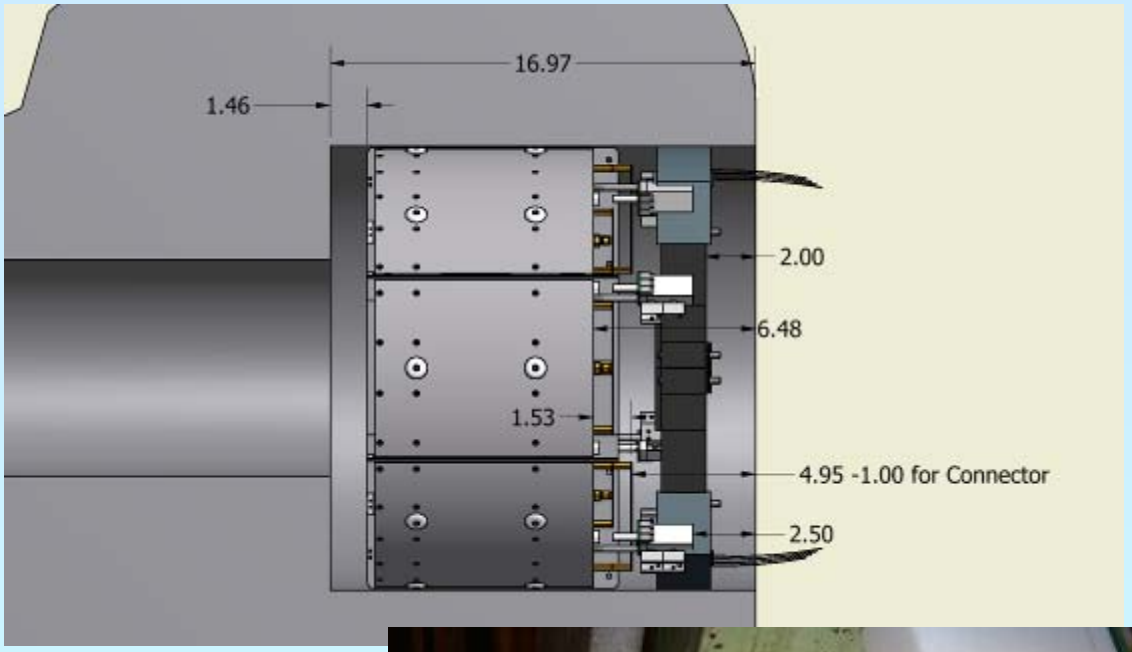




North & South internal work platforms for next summer's shutdown

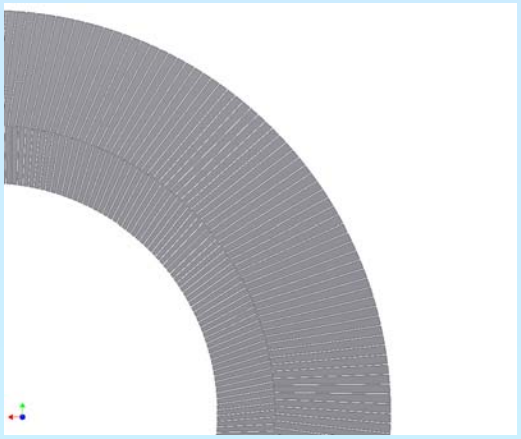
Sent analyses to C-A ESRC for review last week

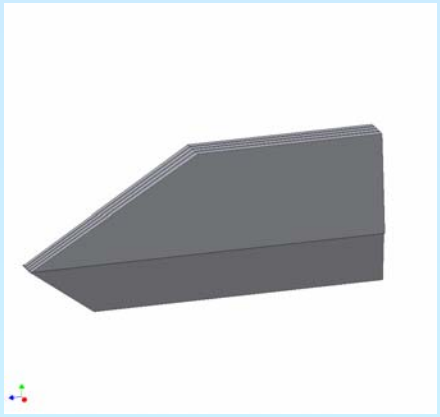
TECHNICAL SUPPORT 2012

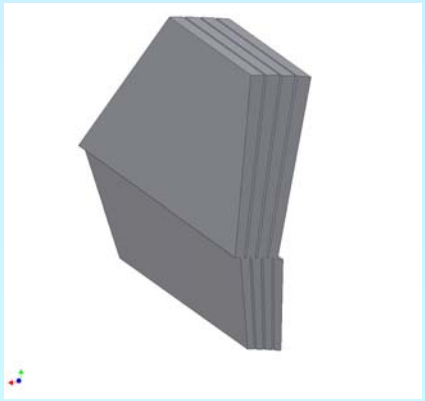


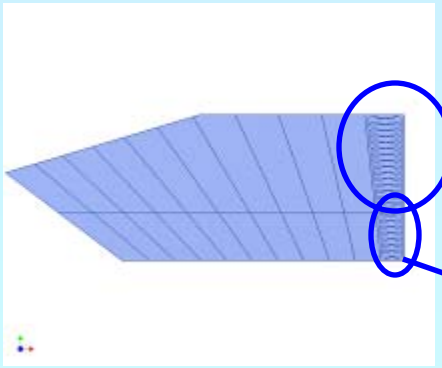
MPC-EX Positioning with respect to MPC

HCal Views









Inner and outer Hadronic Calorimeters
256 segments each, steel and scintillator
0.9 meter total thickness, ~4.6 meters long.
Note how the outer and inner steel segments are angled with respect to radial lines (by 5 degrees, with the inner HCal steel angled in the opposite direction of the outer HCal steel). The inner and outer steel plates are also offset by a ½ period.

HCal Scintillator Concept

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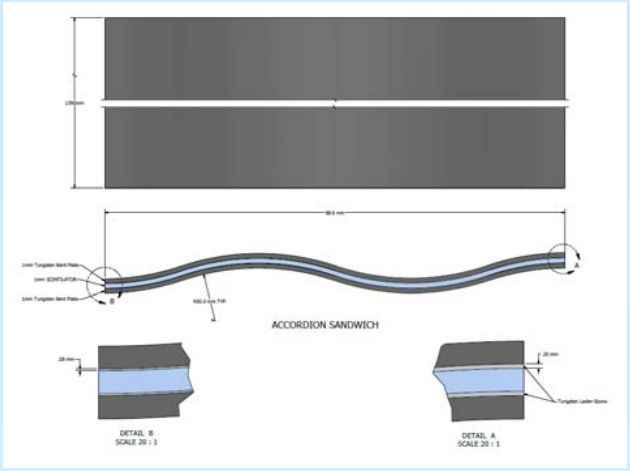

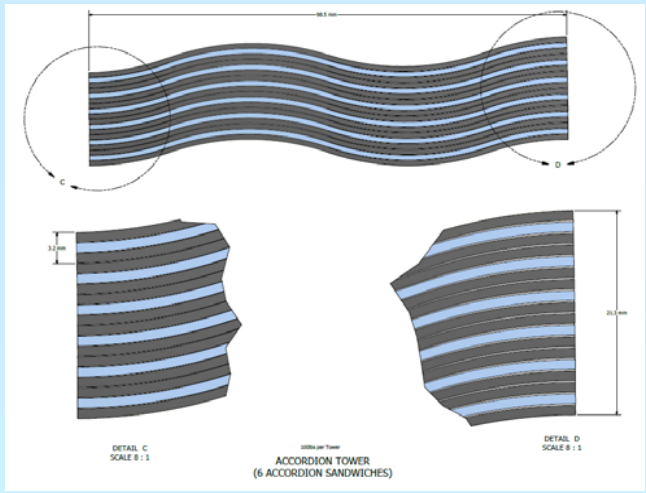

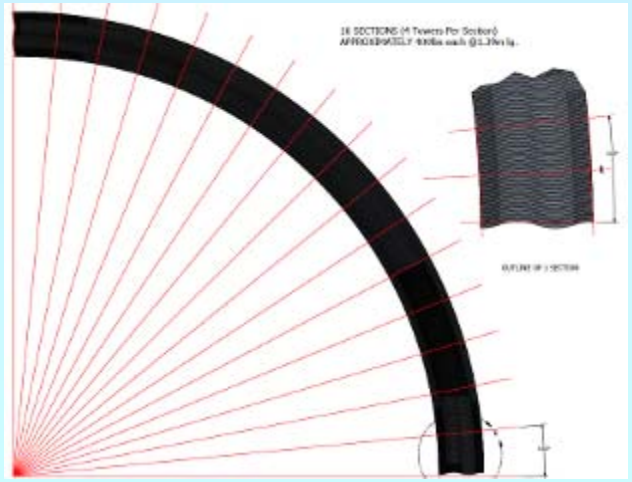

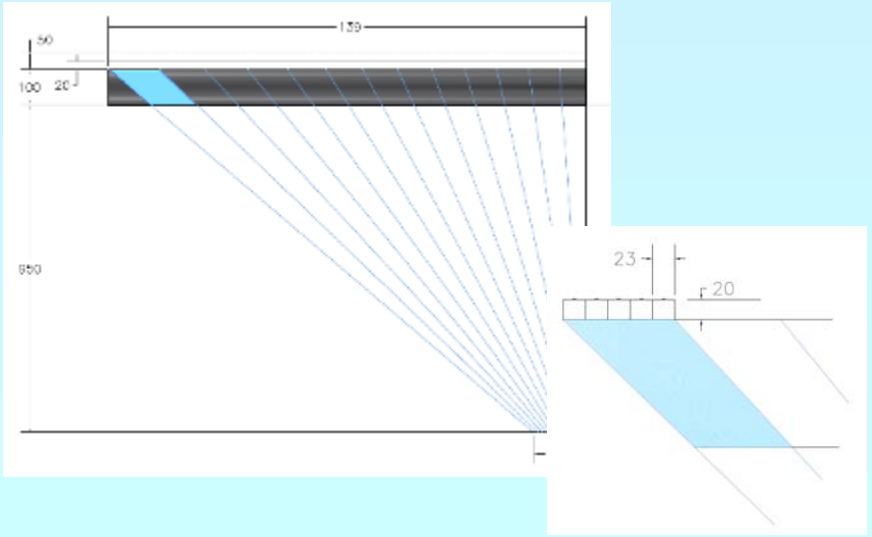

Electromagnetic calorimeter segments using "accordian" shaped scintillators and tungsten plates to optimize detector sampling

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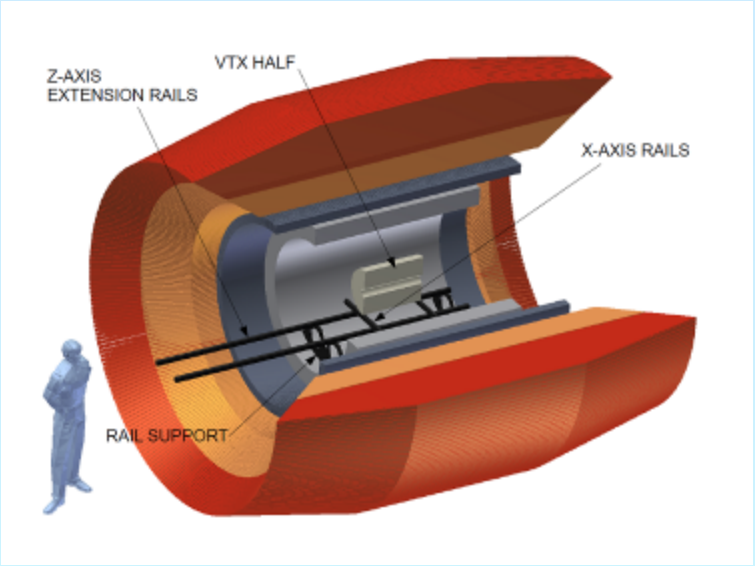
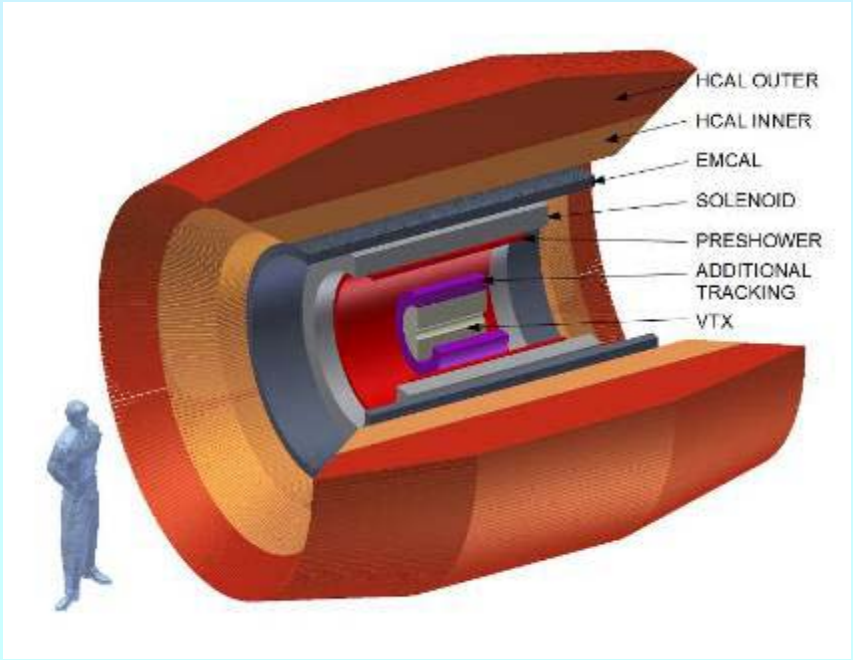
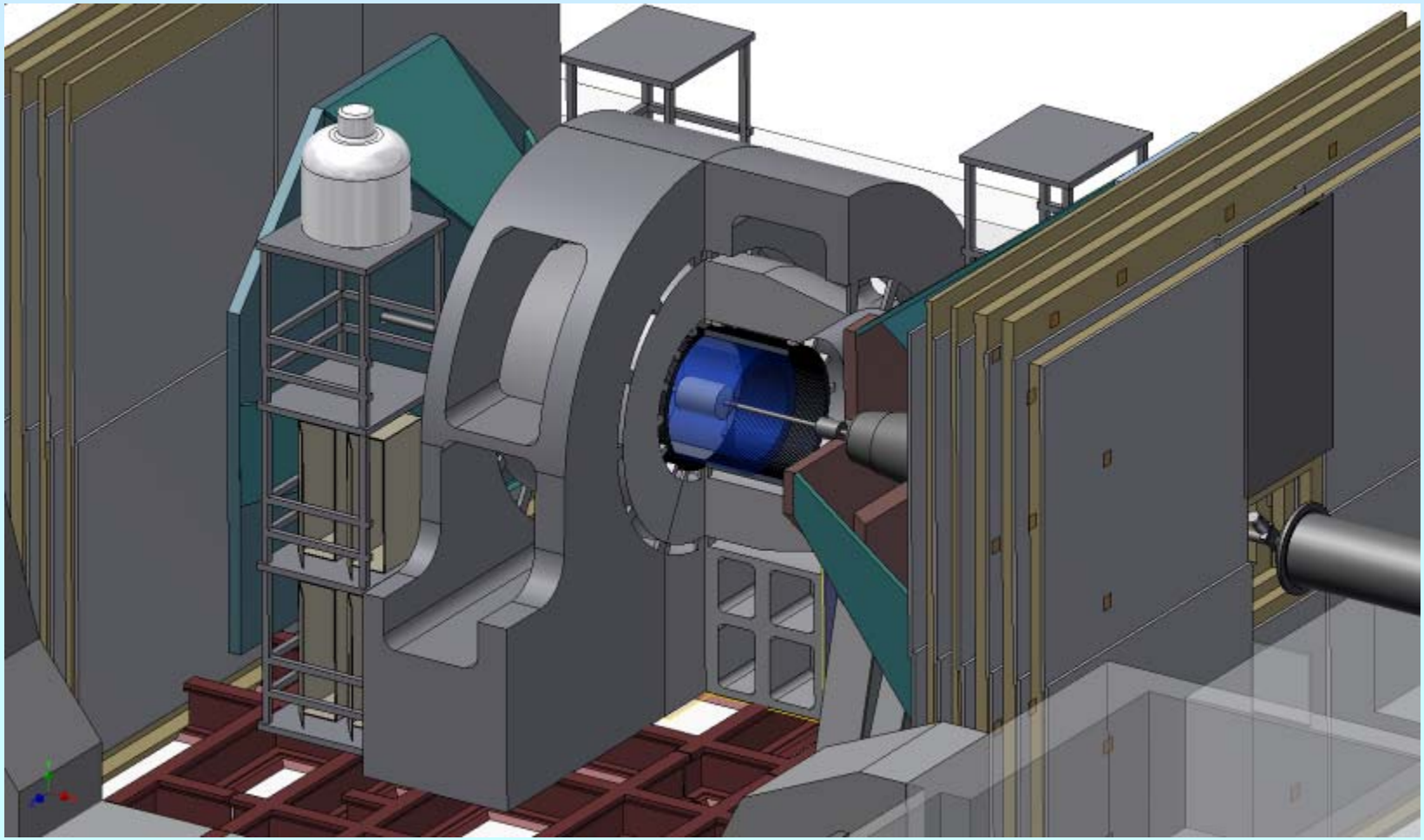


VTX support and maintenance concept

sPHENIX potential upgrades



sPHENIX overall assembly, integration and maintenance concept



TECHNICAL SUPPORT 2012

1. Configuration Management – New Procedures in progress.

2. Upcoming site-wide ISO 14001 & OHSAS 18001 Registration Audit, week of June 18:

   C-A D will have a 45 minute presentation for managers, supervisors, etc. All sessions are 11:15 – Noon, B;ldg 911 Snyder Seminar Hall:

   Tuesday June 5, Thursday June 7, Friday June 8, Thursday June 14

3. Summer students coming next week. Be careful driving and watch out for student drivers.

4. 3rd Annual BNL Safety Day Wed. June 6th 11:00 -1:30 at Berkner Hall. Prizes, giveaways, seminars, hands on learning activities, demos and testing,

5. PHENIX Shutdown review with CAD ESRF June 15?

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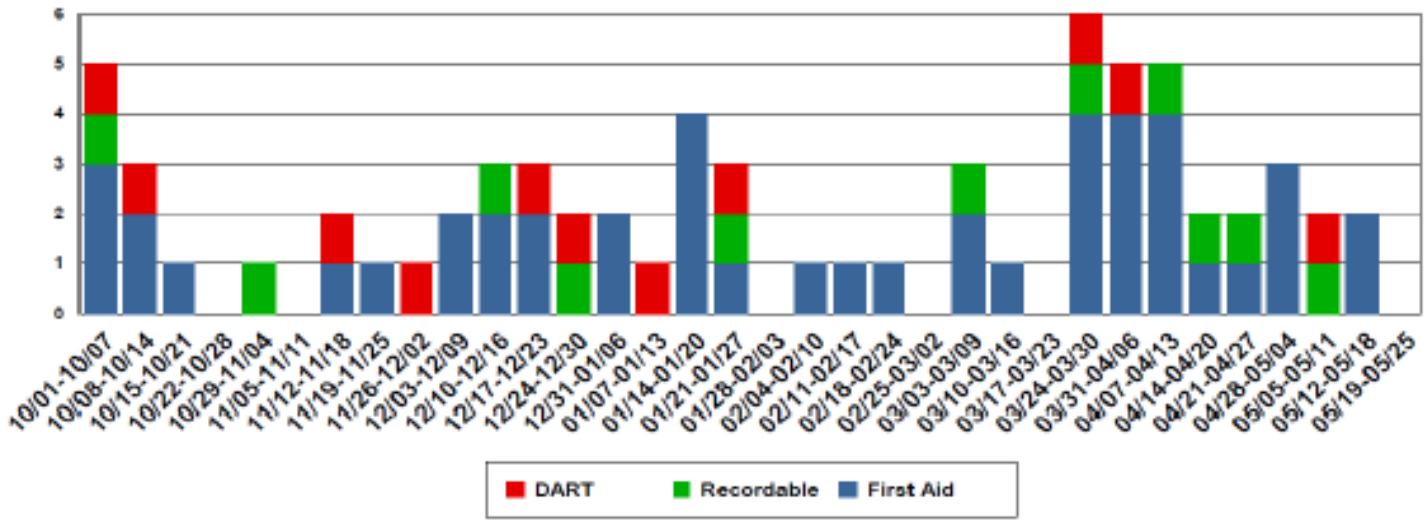
Injuries Per Week (FY)
As of 5/25/2012



Injury Status:

FY12 YTD: DART – 11, TRC – 22, First Aid – 46
FY11: DART – 27, TRC – 42, First Aid – 45
FY10: DART – 19, TRC – 33, First Aid – 52

FY12 Injury Listing: https://intranet.bnl.gov/esh/shsd/seg/OccInj/BNLInjuries.aspx

Recent Injuries		
5/16/12	First Aid	An employee was attempting to secure equipment using a bungee cord and was struck by same. At the OMC, first aid was given.

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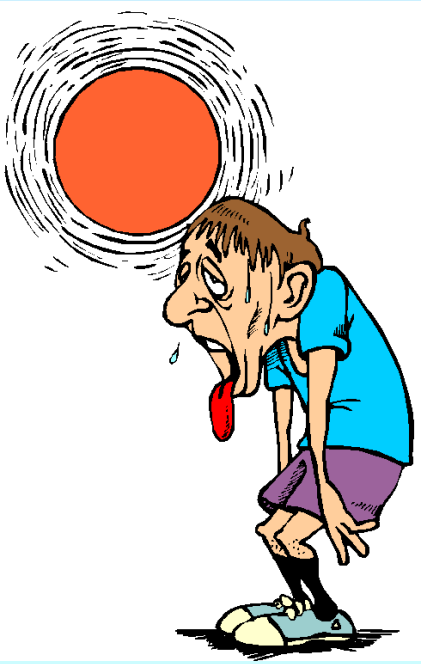
5/24/12	Non-Reportable	A contractor was doing maintenance in the loading dock area [B740 - NSLS II] and sprayed thread lubricant on bolts to loosen them. When he finished his work, he hosed everything down. Shortly thereafter, several PS safety folks walked by and saw a big puddle in the loading dock area with a sheen on the water so they called "2222". The spill did not impact soil or any drains and was contained in the loading dock area. The spill was not reportable as it did not impact the environment. Fire Rescue applied "green stuff" to the spill and Grounds personnel cleaned it up and containerized it for disposal. (Event Link)
5/24/12	Non-Reportable	This morning a BNL vehicle contacted the southeast corner of the South Guard Booth (680A) and damaged the brick veneer on the corner of the guard booth without doing any structural damage. The veneer along with the brick sill will need to be repaired accordingly. (Event Link)
5/23/12	Non-Reportable	A temporary suspension of work was instituted on the Site-Wide Telephone System Replacement Project to address Conduct of Operations compliance issues relating to questions of following Work Permit procedure; PHA signature "sign-off"; and Tool Box meeting documentation. (Event Link)
5/17/12	SC-3	BNL was informed by Energy Solutions, Utah of a noncompliance with their waste acceptance criteria (WAC) at ~1800 on May 17th. Two waste shipments from the BGRR Restoration Project were shipped from BNL on May 5th and a container from each shipment had water in them. 1. One shipment container exceed their WAC by having >1% by volume of water content. When examined at the waste receiver in mid-May it was found to have ~500 gallons of water. A water sample was sent for analysis. 2. The other shipment container had <1% water by volume but had high pH and oil sheen in the water, most probably caused leaching from the waste. The receiver sampled the waste container's water on 5/15 and 5/16. The cause of the water content is currently unknown but was most probably caused by rain infiltration into the containers. Investigation by BNL will determine the definite cause of the water content. (Event Link)
5/16/12	Non-Reportable	On May 16, 2012, the Linac Operator reported that he was unable to interlock the Experimental Hall. During experimental operations earlier in the day, the radiation interlock system was functioning normally. The ATF Safety Officer and Electrical Engineer both responded to trouble-shoot the system. They noticed a pair of indicator lights ("Laser Exit", "Control Room Exit") on Panel #5811 were both off, which is abnormal. After inspecting/testing related door hardware and resetting the system, they verified that the Experimental Hall could not be interlocked. Upon examination of the electrical schematic, the engineer suspected a faulty relay in Panel #5809. It is identified as relay K08 on the main circuit board, and is labeled "Potter & Brumfield R12-3024X2E1". This relay's sole function is to control the timeout window for staff to complete the Experimental Hall search & secure procedure. A replacement relay of identical manufacturer and part number was installed, and correct operation of the Experimental Hall interlock was verified. The timeout was observed to ~35 seconds, corresponding to the manufacturer's specifications. (Event Link)

Where To Find PHENIX Engineering Info

4 More Weeks of Run 12 ! Then the Shutdown Begins.



http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_SSint-page.htm